

CLAIMS

1. A brush seal, comprising:
 - a back plate;
 - a side plate;
 - a first set of bristles; and
 - a second set of bristles between said first set of bristles and said side plate;wherein said second set of bristles have a characteristic, different than said first set of bristles, that reduces windage effects on said first set of bristles.
2. The brush seal of claim 1, wherein said characteristic comprises said second set of bristles being more rigid than said first set of bristles.
3. The brush seal of claim 2, wherein said characteristic comprises bristles in said second set having a larger diameter than bristles in said first set.
4. The brush seal of claim 2, wherein said characteristic comprises said first set of bristles extending further from the brush seal than said second set of bristles.
5. The brush seal of claim 1, wherein said sets of bristles have non-interfering lay angles.
6. The brush seal of claim 2, wherein said first and second sets of bristles have first and second lay angles, respectively, and a difference between said first and second lay angles is between approximately -15° and 15° .

7. The brush seal of claim 1, wherein said characteristic comprises said first set of bristles extending further from the brush seal than said second set of bristles said side plate.
8. The brush seal of claim 7, wherein said second set of bristles extends at least to said back plate.
9. The brush seal of claim 1, wherein said first and second sets of bristles comprise separate bristle packs.
10. The brush seal of claim 1, further comprising a windage cover.
11. A brush seal for sealing a gap between first and second components, comprising:
 - a back plate;
 - a side plate;
 - a set of contacting bristles that engages the second component; and
 - a set of non-contacting bristles that extends towards, but does not engage, the second component;wherein said set of non-contacting bristles resides between said set of contacting bristles and said side plate.
12. The brush seal of claim 11, wherein said sets of bristles have non-interfering lay angles.

13. The brush seal of claim 12, wherein said sets of bristles have first and second lay angles, respectively, and a difference between said first and second lay angles is between approximately -15° and 15° .

14. The brush seal of claim 11, wherein said set of non-contacting bristles is more rigid than said set of contacting bristles.

15. The brush seal of claim 14, wherein bristles in said set of non-contacting bristles have a diameter larger than bristles in said set of contacting bristles.

16. The brush seal of claim 11, further comprising a windage cover.

17. The brush seal of claim 11, wherein said set of contacting bristles and said set of non-contacting bristles comprise separate bristle packs.

18. The brush seal of claim 11, wherein said non-contacting bristles extends at least to said back plate.

19. In a brush seal having a set of longer bristles adjacent a set of shorter bristles, wherein the improvement comprises said shorter bristles located on a high pressure side of said longer bristles.